

# Draft CVPIA Fiscal Year 2010 Annual Work Plan

October 1, 2009

## ***Program Title***

Spawning and Rearing Habitat Restoration Program – CVPIA Section 3406(b)(13)

## ***Responsible Entities***

Staff Name	Agency	Role
John Hannon	USBR	Lead
Dan Cox	USFWS	Co-Lead

## ***Program Goals and Objectives for FY 2010***

The program objectives follow:

- Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout by placing 10,000 tons of gravel.
- Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout by placing 7,000 tons of gravel.
- Increase the availability of spawning gravel and rearing habitat for Stanislaus River Basin Chinook salmon and steelhead trout by placing 3,000 tons of gravel.

### **Source Documents that Support the Objectives**

CALFED Bay-Delta Program EIS/EIR Ecosystem Restoration Plan, Vol. 3 Strategic Plan for Ecosystem Restoration; CALFED Bay-Delta Program Programmatic Record of Decision, Vol. 1 – Record of Decision and Attachments 1 through 4; CALFED Bay-Delta Program Phase II Report, Final Programmatic EIS/EIR Technical Appendix; CVPIA Final PEIS; CVPIA Final Programmatic Environmental Impact Statement. (PEIS), Attachment F; CVPIA Draft PEIS, Technical Appendix Vol. 3; Upper Sacramento River Fisheries and Riparian Habitat Management Plan; Fisheries and Instream Habitat Management and Restoration Plan for the Lower American River; and Stanislaus River Restoration Plan.

Work performed in this program compliments the objectives in CVPIA Section 3406(b)(1).

Staff involved in the two programs coordinate the development of the activities in the respective programs and share the data developed from this work.

## ***Status of the Program***

Spawning gravel placement sites in each of the three rivers have been identified based on key habitat location and on ready river access. All gravel placed in the rivers conform to criteria developed by the Fish and Wildlife Service, Department of Fish and Game and the National Marine Fisheries Service. These criteria relate to size and relative proportion of the various

sizes, and to particular times of the year when the gravel can be placed. Gravel is placed on the river bank in the Upper Sacramento River and subsequent high river flows distribute the gravel to areas downstream to be utilized for spawning and rearing. The gravel in the American River and Stanislaus River has been placed to create habitat anticipated to be immediately usable by salmonids.

Gravel has been placed at three sites on the Upper Sacramento River - on the right bank 300 yards downriver from Keswick Dam, 1.5 miles downriver from Keswick Dam at Salt Creek, and approximately 10 miles downriver from Keswick Dam in Redding. The gravel is placed on the bank and high flows distribute the gravel within the river channel. To date approximately 170,000 tons of gravel has been placed at these three sites.

Gravel has been placed at four sites in the American River - two locations at Sailor Bar, downstream of Lower Sunrise Bridge, and at Sacramento Bar. The substrate at the sites was manipulated prior to gravel placement in order to improve permeability after the gravel was in place. The conditions in the regions where gravel was placed has been monitored and compared with conditions in adjacent areas. A five year series of new projects began in 2008. Reclamation contracted with the Water Forum (City of Sacramento) for assistance in the permitting, placement, and monitoring of spawning gravel projects. Six thousand tons of gravel were placed in 1999 and 7,000 tons were placed in 2008.

Several sites have been selected for gravel placement in Stanislaus River in the reach within two miles downriver of Goodwin Dam and at Knights Ferry. Gravel has been placed by conventional front end loader, by sluice delivery, and by helicopter beginning in 1997. More than 18,000 tons of gravel has been placed to date.

Salmonids have been observed spawning on the placed gravel at each of the gravel placement sites. Aerial photography and onsite ground surveys have documented the location of salmon redds and juvenile salmonids have been observed rearing in the vicinity of the gravel.

New data is showing a lack of available juvenile rearing habitat in many rivers and may change the emphasis of the (b)(13) program in the future. The (b)(13) program may increasingly emphasize restoration of side channels, channel margins, and meander belts to address the lack of juvenile rearing habitat. Restoration of these habitats will be incorporated into the program as site specific needs are identified.

### ***FY 2009 Accomplishments***

Accomplishments in the Upper Sacramento River included the purchase and placement of 10,000 tons of spawning gravel at the Salt Creek site. Monitoring efforts continued with two meetings being held to review and plan future activities. Examination of redd survey data and instream gravel locations show that winter-run Chinook salmon are preferentially using injected gravel that was injected at the Keswick Dam and Salt Creek sites. Preliminary substrate data shows a lack of spawning gravel between ACID Dam to the confluence with Clear Creek. Plans are underway to identify potential new sites in this reach as well as possible injection methods.

Accomplishments in the American River included the permitting for utilization of dredger tailings piled along the American River at Mississippi Bar. The program conducted a field investigation into the suitability of the dredger tailings at Mississippi Bar and at Sailor Bar. The investigation consisted of test pit excavation and sorting to determine size classifications and cleanliness/washability of the material, testing for presence of mercury and other metals, and sound measurements to determine noise impacts to nearby inhabitants. Mississippi Bar appears more suitable because of the high clay content stuck to the gravel at Sailor Bar. Therefore Mississippi Bar gravel was used in 2009. Extensive archaeological investigations were required due to the historic significance of the dredger tailings. The amount of usable spawning gravel sized material piled in the areas the program investigated was 288,000 cubic yards at Mississippi Bar and 106,000 cubic yards at Sailor Bar. The Mississippi Bar gravel used in 2009 was processed (sorted and washed) on-site by City of Sacramento utilities personnel and approximately 9,000 tons was placed in the river according to designed specifications at Sailor Bar by California Department of Fish and Game river restoration personnel from the LaGrange office. Post project monitoring will likely reveal: quick colonization of new gravel by benthic macroinvertebrates, increased gravel permeability, water quality improvements, heavy spawning use by Chinook and steelhead, juvenile salmonid use of improved adjacent habitats, and enhanced gravel mobility.

No gravel placement activities were conducted in the Stanislaus River during 2009. Meetings with stakeholders regarding permitted areas at Knights Ferry revealed that the local population was against gravel projects near the Town of Knights Ferry. They were in favor of habitat projects occurring elsewhere but no other sites were selected in 2009. One redd mapping survey was conducted in prior year gravel placement areas. Spawning occurred on all past gravel placement sites but density was low due to very low escapement. Reclamation's Technical Service Center is processing topographic data collected throughout the entire river in 2008 for use in planning future projects.

**Table 1. FY 2010 Tasks, Costs, Schedules and Deliverables**

Task or Subtask Number	Name of Activity	FTE	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
<b>1.1</b>	<b>Program Management</b>							
1.1.1		0.15	USBR. Works with the FWS co-lead and Reclamation activity managers for each of the three river systems in which gravel placement is authorized.	9/30/2010	\$20,000	\$0	\$0	\$20,000
	<u>Subtotal Costs</u>	0.15			\$20,000	\$0	\$0	\$20,000
<b>1.2</b>	<b>Program Support</b>							
1.2.1		0.14	Fish and Wildlife Service. Coordinates with Reclamation staff and is the primary point of contact with the Fish and Wildlife Service. Plans projects, conducts monitoring, oversees construction.	9/30/2010	\$30,500	\$0	\$0	\$30,500
	<u>Subtotal Costs</u>	0.14			\$30,500	\$0	\$0	\$30,500
<b>1.3</b>	<b>Technical Support</b>							
1.3.1		0.15	Activity manager for upper Sacramento River gravel projects	9/30/2010	\$25,000	\$0	\$0	\$25,000
1.3.2		0.15	MP-200 Engineering support	9/30/2010	\$20,000	\$0	\$0	\$20,000
1.3.3		0.03	MP-3800 Prepare contract paperwork for all gravel placement	7/31/2010	\$2,730	\$0	\$0	\$2,730
	<u>Subtotal Costs</u>	0.33			\$47,730	\$0	\$0	\$47,730
<b>1.4</b>	<b>Restoration Actions</b>							
1.4.1			see 1.11		\$0	\$0	\$0	\$0
	<u>Subtotal Costs</u>				\$0	\$0	\$0	\$0
<b>1.7</b>	<b>Outreach and Public Involvement</b>							
1.7.1		0.02	Public Involvement		\$3,000	\$0	\$3,000	\$6,000
	<u>Subtotal Costs</u>	0.02			\$3,000	\$0	\$3,000	\$6,000
<b>1.8</b>	<b>Planning</b>							

Task or Subtask Number	Name of Activity	FTE	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
1.8.1		0.04	Gravel placement in Sacramento, American, and Stanislaus Rivers		\$8,000	\$0	\$3,000	\$11,000
	<u>Subtotal Costs</u>	0.04			\$8,000	\$0	\$3,000	\$11,000
<b>1.9</b>	<b>Environmental Compliance</b>							
1.9.1		0.03	American River permitting	4/1/2010	\$5,000	\$0	\$2,000	\$7,000
1.9.2		0.03	Sacramento River project permitting	7/1/2010	\$5,000	\$0	\$0	\$5,000
	<u>Subtotal Costs</u>	0.06			\$10,000	\$0	\$2,000	\$12,000
<b>1.11</b>	<b>Construction</b>							
1.11.1			Sacramento River Gravel Placement contract (6,000 tons at \$26/ton)	9/30/2010	\$156,000	\$0	\$0	\$156,000
1.11.2			American River Gravel Placement at Sailor Bar (7,000 tons at \$20/ton)	9/30/2010	\$140,000	\$0	\$5,000	\$145,000
1.11.3			Stanislaus River Gravel Placement with AFRP	9/30/2010	\$0	\$0	\$0	\$0
			2009 NMFS OCAP BO Action III.2.1, page 626					
	<u>Subtotal Costs</u>				\$296,000	\$0	\$5,000	\$301,000
<b>1.12</b>	<b>Monitoring</b>							
1.12.1		0.20	American River Monitoring of adult and juvenile fish use, gravel movement, hyporheic conditions, and invertebrate abundance (contract)	9/30/2010	\$78,770	\$0	\$0	\$78,770
1.12.2		0.01	Stanislaus River Monitoring of fish use and gravel movement	9/30/2010	\$3,000	\$0	\$0	\$3,000
	<u>Subtotal Costs</u>	0.21			\$81,770	\$0	\$0	\$81,770
<b>1.13</b>	<b>Modeling</b>							
1.13.1		0.01	Flow modeling at American River restoration sites to evaluate habitat suitability for steelhead and Chinook pre and post project	9/30/2010	\$3,000	\$0	\$0	\$3,000
	<u>Subtotal Costs</u>	0.01			\$3,000	\$0	\$0	\$3,000
	<b>Total Costs</b>	<b>.96</b>			<b>\$500,000</b>	<b>\$0</b>	<b>\$13,000</b>	<b>\$513,000</b>
	Reclamation Total Cost	0.61			\$434,730			

Task or Subtask Number	Name of Activity	FTE	Description of Activity	Completion Date	Restoration Fund Anticipated	Water & Related Resources Anticipated	State or Other Sources Anticipated	Total All Sources Anticipated
	Service Total Cost	.35			\$65,270			
	<b>Unfunded Needs</b>							
1.11.1			Sacramento River Gravel Placement to meet goal (4,000 additional tons)		\$104,000			\$104,000
1.9.3			Stanislaus River project planning/permitting		\$40,000			\$40,000
1.11.3			Stanislaus River gravel placement to meet goal (3,000 tons @\$30)		\$90,000			\$90,000
1.12.2			Sacramento River monitoring		\$100,000			\$100,000
1.12.1			American River monitoring		\$100,000			\$100,000
1.10.1			Survey and Design for new American and Sacto projects		\$100,000			\$100,000
1.12.3			Stanislaus River monitoring		\$50,000			\$50,000
1.11.4			Stanislaus River 2 gravel (expanded) year 1 of 5 to meet NMFS OCAP BO by 2014 (includes permitting and monitoring)		\$800,000			\$800,000
	<b>Total Unfunded Needs</b>				<b>\$1,384,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,384,000</b>

**Table 2. Budget Breakout**

Task	Agency	FTE	LABOR		CONTRACTS		USBR Only Misc. Costs	Total Costs
			Direct Salary and Benefits Costs <sup>1/</sup>	FWS Only Overhead Assess: 22% of Direct Salary and Benefits Costs <sup>2/</sup>	Contract, Grant, and Agreement Costs	FWS Only Overhead Assess: 6% Contract Costs <sup>2/</sup>		
<b>1.1 Program Management</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.15	\$20,000		\$0		\$0	\$20,000
<b>1.2 Program Support</b>	FWS	0.14	\$25,000	\$5,500	\$0	\$0		\$30,500
	USBR		\$0		\$0		\$0	\$0
<b>1.3 Technical Support</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.33	\$47,730		\$0		\$0	\$47,730
<b>1.7 Outreach and Public Involvement</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.02	\$3,000		\$0		\$0	\$3,000
<b>1.8 Planning</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.04	\$8,000		\$0		\$0	\$8,000
<b>1.9 Environmental Compliance</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR	0.06	\$10,000		\$0		\$0	\$10,000
<b>1.11 Construction</b>	FWS		\$0	\$0	\$0	\$0		\$0
	USBR		\$0		\$296,000		\$0	\$296,000
<b>1.12 Monitoring</b>	FWS	0.2	\$26,041	\$5,729		\$0		\$31,770
	USBR	0.01	\$0		\$50,000		\$0	\$50,000
<b>1.13 Modeling</b>	FWS	0.01	\$2,459	\$541	\$0	\$0		\$3,000
	USBR		\$0		\$0		\$0	\$0
Administrative Total - FWS			\$53,500	\$11,770		\$0		\$65,270
Contracts, Grants and Agreements Total - FWS					\$0			\$0
<b>FWS Total Costs</b>		0.36	\$53,500	\$11,770	\$0	\$0		\$65,270
Administrative Total - USBR			\$88,730				\$0	\$88,730
Contracts, Grants and Agreements Total - USBR					\$346,000			\$346,000
<b>USBR Total Costs</b>		0.61	\$88,730		\$346,000		\$0	\$434,730
<b>TOTAL ALL</b>		<b>.97</b>	<b>\$142,230</b>	<b>\$11,770</b>	<b>\$346,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$500,000</b>

<sup>1/</sup> For FWS only: The FWS develops a bio-rate which is the combination of both the salary/benefit and related administrative costs. The FWS simple definition reads, "It is an average \$\$ rate that is developed and used for estimating project costs. It incorporates a biologists' salary and benefits, supervisory, clerical and biologist support costs and all other office operating costs related to completing project tasks.

<sup>2/</sup> FWS assesses an O/H Burden charge of 6% on all contracts/agreements related to budget object codes starting with 25, 41, and 32, and a charge of 22% on costs under all other budget object codes.

**Table 3. Three Year Budget Plan FY 2011 – 2013**

(\$ amounts in thousands)

Year	Description of Activities	Requested RF Funding	Requested W&RR Funding
2011	A. Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout. 10,000 tons of gravel placed B. Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout. 7,000 tons of gravel placed C. Increase the availability of spawning gravel and rearing habitat for Stanislaus River Basin Chinook salmon and steelhead trout. 3,000 tons of gravel placed	\$1,100*	\$0
2012	A. Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout. 10,000 tons of gravel placed B. Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout. 7,000 tons of gravel placed C. Increase the availability of spawning gravel and rearing habitat for Stanislaus River Basin Chinook salmon and steelhead trout. 3,000 tons of gravel placed	\$1,200*	\$0
2013	A. Increase the availability of spawning gravel and rearing habitat for Sacramento River Basin Chinook salmon and steelhead trout. 10,000 tons of gravel placed. B. Increase the availability of spawning gravel and rearing habitat for American River Basin Chinook salmon and steelhead trout. 7,000 tons of gravel placed C. Increase the availability of spawning gravel and rearing habitat for Stanislaus River Basin Chinook salmon and steelhead trout. 3,000 tons of gravel placed	\$1,300*	\$0

\*Requested increases are reflective of rising costs of staff and supplies and are estimated to be a minimum of 10% increase per year.

Note: The FY 2011 – 2013 Budget Plan provides estimates of capability only. The amounts are displayed are those that might be reasonably appropriated each year. These figures do not reflect the future Congressional Appropriations process. All of these estimates will be adjusted annually as RF collections are realized.

**Table 4. FY 2010 CVPIA Monitoring Projects**

<b>Project Description:</b>	American River Spawning Gravel Effectiveness Monitoring
<b>FY 2009 Project Complete?</b>	Continuing
<b>CVPIA annual work plan subtask number:</b>	1.12.1
<b>Scope of the monitoring effort:</b>	Evaluates an ongoing series of seven yearly projects in the American River from Nimbus Dam to River Bend Park
<b>Product/deliverable:</b>	Reports and data files
<b>Cost:</b>	~\$110k/year (\$78,770 in 2010; seeking cost share)
<b>Questions posed:</b>	Are steelhead and Chinook spawning on gravel projects? Are gravel conditions conducive to high egg to fry survival? Can gravel projects enhance invertebrate production? Do the gravel projects provide juvenile salmonid rearing habitat? Can the onsite rock source be used cost effectively? How much gravel should be added yearly?
<b>Objectives:</b>	Determine effectiveness of projects by answering the questions above.
<b>Results – expected or actual:</b>	Spawning use is high. Intragravel conditions should be good for survival. Invertebrates quickly recolonize. Most rearing occurred downstream of gravel. Hopefully onsite rock can be used.
<b>Data collection methods:</b>	Ground and aerial redd surveys, intragravel permeability and water quality measurements, pebble counts, tracer rocks, snorkel surveys, invertebrate sampling
<b>Data management:</b>	Reports in regional library. GIS shapefiles, Excel files, and Access database will be available and maintained by USBR
<b>Assessment:</b>	Spawning and rearing habitat use, quality, and distribution will be evaluated to determine whether key limiting factors are being addressed and to help in design of future habitat improvement projects.
<b>Use of information in future decision making:</b>	Future project designs will be based on monitoring results. Species data is included in ESA consultations on CVP operations.
<b>NMFS OCAP BO RPA</b>	No